IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A field apparatus control system for controlling a field apparatus connected to a field bus, comprising:

first and second main control units configured to control the field apparatus; and

first and second communication control units configured to process information communication between the first and second main control units, respectively, and the field apparatus via the field bus,

wherein the first main control unit and the first communication control unit are in a normal system mode or in a standby system mode, the second main control unit and the second communication control unit are in a normal system mode or in a standby system mode, and each of the first and second communication control units have a same address on a network via the field bus, and

wherein information outputted to the same address from the field apparatus via the field bus is received and processed by both the first and second communication control units.

Claim 2 (Currently Amended): The field apparatus control system according to claim 1, wherein each of said first and second communication control units further comprises:

means for transmitting an operation request to the field apparatus based on control information when the respective communication control unit is in the normal system mode, said control information being transmitted from the corresponding main control unit;

means for receiving response information corresponding to the operation request transmitted from the field apparatus to the same address so as to transmit the received response information to the corresponding main control unit;

first means for judging whether or not failure occurs to the respective communication control unit and corresponding main control unit;

means for stopping operation of the respective communication control unit, when the first means for judging judges that failure occurs to the respective communication control unit and the respective communication control unit is in the normal system mode; and

means for monitoring the operation of a communication control unit that is in the normal system mode when the respective communication control unit is in the standby system mode, detecting a stop of operation of the communication control unit that is in the normal system mode when the respective communication control unit is in the standby system mode, and switching the respective communication control unit and corresponding main control unit to the normal system mode when the respective communication control unit and the corresponding main control unit are in the standby system mode.

Claim 3 (Previously Presented): The field apparatus control system according to claim 1, wherein said field bus connected to the field apparatus includes first and second field buses, and each of said communication control units further comprises:

means for transmitting an operation request to the field apparatus via each of the first and second field buses based on control information when the respective communication control unit is in the normal system mode, said control information being transmitted from the corresponding main control unit;

second means for judging whether or not response information corresponding to the operation request is transmitted from the field apparatus via the first field bus;

first means for receiving the transmitted response information when the second means for judging judges that the response information is transmitted, and for transmitting the received response information to the corresponding main control unit;

third means for judging whether or not response information corresponding to the operation request is transmitted from the field apparatus to the address via the second field bus when the second means for judging judges that the response information is not transmitted;

second means for receiving the transmitted response information when the third means for judging judges that the response information is transmitted, and for transmitting the received response information to the corresponding main control unit;

means for transmitting information to indicate the generation of failure in the first or second field buses to the corresponding main control unit when the third means for judging judges that the response information is not transmitted;

fourth means for judging whether or not failure occurs to the respective communication control unit or the corresponding main control unit;

means for stopping operation of the respective communication control unit when the respective communication control unit is in the normal system mode and the fourth means for judging judges that failure occurs to the respective communication control unit or the corresponding main control unit; and

means for monitoring the operation of a communication control unit that is in the normal system mode when the respective communication control unit is in the standby system mode, detecting a stop of operation of the communication control unit that is in the normal system mode when the respective communication control unit is in the standby system mode, and switching the respective communication control unit and corresponding main control unit to the normal system mode when the respective communication control unit and the corresponding main control unit are in the standby system mode.

Claim 4 (Currently Amended): A field apparatus control system for controlling normal and standby field apparatuses, comprising:

normal and standby field buses connected to the normal and standby field apparatuses, respectively, wherein said normal field bus is isolated from said standby field apparatus and said standby field bus is isolated from said normal field apparatus;

first and second main control units configured to control the normal and standby field apparatuses; and

first and second communication control units configured to process information communication between each of the main control units and the normal and standby field apparatuses via the normal and standby field buses, respectively, said first communication control unit further comprising,

means for transmitting an operation request to the normal system field apparatus via the normal system field bus based on the control information which is transmitted from the first main control unit,

means for receiving response information corresponding to the operation request which transmitted from the normal system field apparatus via the normal system field bus and for transmitting the received response information to the first main control unit,

means for judging whether or not failure occurs to the first main control unit or the first communication control unit, and

means for stopping operation of the first communication control unit when the means for judging judges that failure occurs to the first main control unit or the first communication control unit, and

wherein said second communication control unit comprises means for monitoring operation of the first communication control unit so as to switch the second communication

control unit which is in the standby system mode to the normal system mode when detecting a stop of the operation of first communication control unit according to the monitored result,

wherein the first main control unit and the first communication control unit operate in a normal system mode, second main control unit and the second communication control unit operate in a standby system mode, and the first communication control unit is connected via the normal system field bus to the normal system field apparatus so that the first communication control unit executes information communication processing between the first main control unit and the normal system field apparatus via the normal system field bus, and

wherein the second communication control unit is connected via the standby system field bus to the standby system field apparatus so that the second communication control unit executes information communication processing between the second main control unit and the standby system field apparatus via the standby system field bus.

Claim 5 (Canceled).

Claim 6 (Previously Presented): A field apparatus control system for controlling a field apparatus, comprising:

duplicated first and second field buses connected to said field apparatus;

a main control unit configured to control said field apparatus; and

a communication control unit configured to process information communication between the main control unit and the field apparatus via the first and second field buses,

wherein said communication control unit further comprises

means for transmitting an operation request to the field apparatus via the first and second field buses based on control information transmitted from the main control unit[[;]],

first means for judging whether or not response information corresponding to the operation request is transmitted from the field apparatus via one of the first and second field buses,

means for receiving the transmitted response information when the first judgment means for judging judges that the response information is transmitted so as to transmit and for transmitting the received response information to the main control unit,

second judgment means for judging whether or not response information corresponding to the operation request is transmitted from the field apparatus via other of the first and second field buses when the first judgment means judges that the response information is transmitted,

means for receiving the transmitted response information when the second judgment means judges that the response information is transmitted so as to transmit the received response information to the main control unit, and

means for transmitting information to indicate the generation of failure in the first and second field buses to the main control unit when the second judgment means judges that the response information is not transmitted.

Claim 7 (Original): The field apparatus control system according to claim 1, wherein said field bus is configured by a radio system using radio waves in a high frequency band.

Claim 8 (Previously Presented): The field apparatus control system according to claim 3, wherein said duplicated first and second field buses are configured by radio transmissions based on radio waves which have different wavelength bands, respectively.

Claim 9 (Currently Amended): A computer readable storage medium storing computer executable instructions used in a field apparatus control system for controlling configured to control a field apparatus connected to a field bus, said field apparatus control system comprising duplicated normal and standby first and second main control units for controlling configured to control the field apparatus; and duplicated normal and standby first and second computers for processing information communication between the normal and standby first and second main control units and the field apparatus via the field bus, respectively, said computer readable storage medium being readable by at least one of the normal and standby first and second computers, said computer executable instructions stored on said computer readable storage medium ~~comprising~~ configured to cause a computer to perform steps of:

~~first means for~~ causing at least one of the normal and standby first and second computers to transmit an operation request to the field apparatus based on control information when the own at least one computer is in a the normal computer mode, said control information being transmitted from the normal corresponding main control unit;

~~second means for~~ causing at least one of the normal and standby first and second computers to receive response information corresponding to the operation request transmitted from the field apparatus to an a same address, said same address being allocated to the normal and standby first and second computers;

~~third means for~~ causing at least one of the normal and standby first and second computers to transmit the received response information to the corresponding main control unit of an own system corresponding to the at least one of the normal and standby computers;

~~fourth means for~~ causing at least one of the normal and standby first and second computers to judge whether or not failure occurs to the own system corresponding main control unit or respective computer;

~~fifth means for~~ causing at least one of the normal and standby first and second computers to, when the own computer is the normal computer and it is judged that failure occurs to the own computer, stop the operation of the own computer when the respective computer is in the normal system mode and when the respective computer judges that failure occurs in the respective computer; and

~~sixth means for~~ causing at least one of the normal and standby first and second computers to monitor operation of the a computer operating in a normal system mode computer when the own respective computer is in the standby computer system mode, and when, by the monitored result, detecting the stop of the operation of the normal computer, to switch the own computer which is the standby computer to the normal computer system mode when detecting the stop of the operation of the computer operating in the normal system mode based on the monitored result.

Claim 10 (Previously Presented): A field apparatus control system for controlling a field apparatus connected to a field bus, comprising:

first and second main control units configured to control the field apparatus; and

first and second communication control units configured to process information communication between the first and second main control units, respectively, and the field apparatus via the field bus,

wherein the first main control unit and the first communication control unit are in a normal system mode or in a standby system mode, the second main control unit and the second communication control unit are in a normal system mode or in a standby system mode, and each of the first and second communication control units have a same address on a network via the field bus,

wherein information outputted to the address from the field apparatus via the field bus is transmitted to both the first and second communication control units, and

wherein said field bus is configured by a radio system using radio waves in a high frequency band.

Claim 11 (Previously Presented): A field apparatus control system for controlling normal and standby field apparatuses, comprising:

normal and standby field buses connected to the normal and standby field apparatuses, respectively;

first and second main control units configured to control the normal and standby field apparatuses; and

first and second communication control units configured to process information communication between each of the main control units and the normal and standby field apparatuses via the normal and standby field buses, respectively,

wherein the first main control unit and the first communication control unit operate in a normal system mode, the second main control unit and the second communication control unit operate in a standby system mode, and the first communication control unit is connected via the normal system field bus to the normal system field apparatus so that the first communication control unit executes information communication processing between the first main control unit and the normal system field apparatus via the normal system field bus,

wherein the second communication control unit is connected via the standby system field bus to the standby system field apparatus so that the second communication control unit executes information communication processing between the second main control unit and the standby system field apparatus via the standby system field bus, and

wherein said normal and standby field buses are configured by a radio system using radio waves in a high frequency band.

Claim 12 (New): A field apparatus control system for controlling a field apparatus connected to a field bus, comprising:

first and second main control units configured to control the field apparatus; and

first and second communication control units configured to process information communication between the first and second main control units, respectively, and the field apparatus via the field bus, each of said first and second communication control units further comprising,

means for transmitting an operation request to the field apparatus based on control information when the respective communication control unit is in the normal system mode, said control information being transmitted from the corresponding main control unit,

means for receiving response information corresponding to the operation request transmitted from the field apparatus to the address so as to transmit the received response information to the corresponding main control unit,

first means for judging whether or not failure occurs to the respective communication control unit and corresponding main control unit,

means for stopping operation of the respective communication control unit, when the means for judging judges that failure occurs to the respective communication control unit and the respective communication control unit is in the normal system mode, and

means for monitoring the operation of a communication control unit that is in the normal system mode when the respective communication control unit is in the standby system mode, detecting a stop of operation of the communication control unit that is in the normal system mode when the respective communication control unit is in the standby

system mode, and switching the respective communication control unit and corresponding main control unit to the normal system mode when the respective communication control unit and the corresponding main control unit are in the standby system mode,

wherein the first main control unit and the first communication control unit are in a normal system mode or in a standby system mode, the second main control unit and the second communication control unit are in a normal system mode or in a standby system mode, and each of the first and second communication control units have a same address on a network via the field bus, and

wherein information outputted to the same address from the field apparatus via the field bus is received by both the first and second communication control units.